

AMENDMENTS TO THE SPECIFICATION

Replace paragraphs 8, 9, 10, 36, 40, 46 and 48 with following:

[008] U.S. Patent 4,810,516, by Knog-Chan et al. discloses the use of polyols in the production of reduced calorie chocolate confections. Knog-Chan et al. substitute a nondigestible polyol fatty acid polyester for the natural fat. Knog-Chan et al. also disclose the use of an artificial sweetener plus a partially or wholly nondigestible carbohydrate bulking agent as substitutable for sugar.

[009] European Patent Application NO. 236,288 to ~~Bernhardt~~ discloses Bernhardt discloses edible, wholly or partially nondigestible intermediate melting polyol fatty acid polyesters having certain rheological properties (e.g., viscosity, liquid/solid stability) at body temperatures. These intermediate melting polyol polyesters are disclosed as partial or total fat replacements in food products, including ice cream and other fat-containing frozen desserts.

[010] U.S. Patent No. 6,010,734, to Whelan et al., discloses a low calorie frozen dessert product, which comprises from about 2 to about 20% fat of which about 30 to 100% is edible, wholly or partially nondigestible polyol fatty acid polyesters.

[036] If a FCB is desired having more significantly reduced calories, then alternative freezing point depressants will have to be used. Other freezing point depressants for use according to the present invention include, propylene glycol, glycerol, and sorbitol. According to one embodiment of the present invention, glycerol is used as the freezing point depressant. While glycerol is a full calorie sweetener, it achieves sufficient freezing point depression at sufficiently low levels to result in a beverage having substantial calorie reductions.

[040] Preferred Sugar MNSs for use in the present invention do not have a laxative effect when used in diet beverage syrup. The most preferred Sugar MNS for use in the present invention is erythritol since it exhibits essentially no laxative effect. Erythritol when consumed at moderate levels, e.g., in a FCB, is completely absorbed into the bloodstream from the small intestine and then is quantitatively excreted in the urine unchanged. Other Sugar MNSs such as isomalt, ~~malitol~~ maltitol and lactitol are less preferred since they are not absorbed from the small intestine and they enter the large intestine where they are fermented by anaerobic bacteria to produce short chain fatty acids and gases. Short chain fatty acids have high water binding activity providing possible effects such as soft stools and diarrhea.

[046] Freezing Point Depression for water is

$$\Delta T = K_F m \qquad \Delta T = K_F m$$

where ΔT is the change in freezing point temperature in degrees Celsius, K_F is the molal freezing point depression constant and is 1.855 for water and m is the molal concentration of solute in water. Now, if one takes a sucrose-sweetened beverage formulation and, for the purpose of simplicity assumes that all ingredients are held constant in concentration except for the sweetener concentration, then the molal concentration of the new reduced calorie sweetener system (e.g., erythritol and aspartame) must equal the molal concentration of sucrose in the original formulation. Since the molecular weight of sucrose is 342 and if the sucrose concentration in the original beverage was 10% (w/v), then the original beverage contained approximately 0.3 m of sucrose. To achieve the same freezing point depression, the erythritol and aspartame must have a total concentration of 0.3 m. Since aspartame will be present at only about 0.001 m, erythritol must be present at about 0.299 m. Since aspartame plays

such a negligible role in freezing point depression, it is a reasonable approximation that all of the freezing point depression comes from erythritol. Thus, to get the same freezing point depression as 10% sucrose, i.e., 0.3 m sucrose, one must use 0.3 m erythritol. The molecular weight of erythritol is 122, thus requiring 36.6[[.]] grams of erythritol per 1000 g of water, approximately 3.5% (w/v). The resulting FCB would be non-caloric.

[048] A reduced calorie beverage syrup according to the present invention was produced by combining 3.5% w/v of erythritol into cola flavored syrup and then reducing the level ~~the of~~ of the high-potency non-caloric sweetener, e.g., aspartame or saccharin by 1/3. This formulation resulted in syrup that's freezing point was depressed thereby achieving the production of a slushy-like product inside the frozen carbonated drink dispenser.